

APPENDIX 11

Alternative D Mitigation

Proponents' Committed Mitigation Measures

Note: The following is the Proponents' committed mitigation measures which is excerpted from their public comments on the Draft SEIS (letter to the PFO Field Manager dated April 4, 2007).

Ultra Resources, Inc. (Ultra), Shell Exploration & Production Company (Shell), and Questar Market Resources (Questar), collectively referred to as the "Proponents", propose the following on-site and off-site mitigation components, as commitments to avoid, minimize and mitigate impacts from natural gas development and production activities in the Pinedale Anticline Project Area (PAPA) in accordance with the National Environmental Policy Act (NEPA), 40 CFR 1508.20. This proposal includes and summarizes both the Proponents' original mitigation commitments and additional mitigation including a \$36 million mitigation and monitoring fund. Some commitments have been revised and are noted in this appendix. The net costs to operators for implementing these combined measures will exceed \$1 billion. Proponents' ability to fulfill these commitments is directly tied to surface access and pace of development as described in the Proponents' Proposed Action.

Proponents' primary emphasis is on avoidance of impacts and on-site mitigation of any unavoidable impact and Proponents also commit to off-site mitigation. This proposal is unlike any other onshore natural gas development proposal in its effort to minimize on-site disturbances to wildlife, livestock, habitat and air while providing benefits to local and state communities.

Proponents' Original Mitigation Commitments:

- Directional drilling - 600 pads to drill over 5,000 total wells (100 fewer pads than the No Action)
- Year-round concentrated drilling and completion activity
- Interim reclamation of well pads
- Liquids Gathering Systems to reduce traffic
- Computer Assisted Operations
- Tier 2 equivalent rig engine emissions by 2009
- 10-year plan and annual meetings with BLM and appropriate state agencies

Proponents' Additional Mitigation Commitments:

- Mitigation and monitoring fund
- Mitigation, monitoring, continued research, and Performance-Based Objectives with threshold
- Voluntary suspension of certain leases on the flanks of the Pinedale Anticline
- 80% rig engine NO_x reduction from 2005 levels by year end 2010 with a Q3 2007 ROD or 42 months following signing of the ROD

Benefits:

- Minimizes surface disturbance and habitat fragmentation
- Preserves large, contiguous undisturbed blocks of habitat and migration corridors
- Provides interim, and earlier, well pad reclamation
- Substantially reduces air emissions
- Substantially reduces traffic and human activity for the Life of Project

- Stabilizes development activity and year-round workforce
- Facilitates community forecasting for planning purposes
- Develops fully the natural gas resource

The benefits to wildlife, livestock, habitat, air quality and local communities of this proposal are substantial. The Proponents' comprehensive long-term development plan will result in the most beneficial long-term protection of the wildlife and habitat while enabling the efficient, full development of the PAPA natural gas resource.

In order to mitigate potential impacts identified during the NEPA process, and in addition to the net cost Proponents will incur by implementing the Proponents' committed mitigation, Proponents have committed to establishing the Pinedale Anticline Operators' Mitigation and Monitoring Fund (Fund). This Fund will provide assurance that financial support is available for mitigation and monitoring for the life of the project. The sole purpose of the Fund is to provide funding for monitoring and mitigation impacts directly related to Proponents' activities in the PAPA SEIS project. Proceeds from the Fund can be used both on-site and off-site in the general PAPA area for air quality monitoring, wildlife, livestock, vegetation and reclamation research, analysis, monitoring, mitigation and agencies' PAPA-project essential full time equivalent (FTE) positions as a result of PAPA activities. Proponents envision that the Fund will support as components of wildlife mitigation:

- basic habitat enhancements for improvement of habitat function both onsite and off-site and
- protection of key migration routes and / or acreage that directly benefit wildlife.

The funds referenced in this correspondence are aimed at mitigation and monitoring activities. It is impossible to accurately predict what types of actions would warrant the use of these monies, but compliance activities do not fit the intended purpose of the fund.

Proponents will provide \$4.2 million as the initial contribution after BLM issues the SEIS Record of Decision (ROD) to begin mitigation and monitoring efforts immediately. Proponents would make future annual contributions to the Fund based on the pace of development. Estimated annual average contribution based on the Proposed Action is \$1.8 million per year with an expected total contribution based on the Proposed Action of approximately \$36 million. This offer is the only commitment for Proponents' contributions to the Fund.

Detailed Explanation of Committed Measures

Background

According to the Energy Information Administration, the PAPA is the second largest natural gas field in the nation with an estimated 20 to 25 trillion cubic feet (TCF) of recoverable natural gas. Unlike Jonah, or any other natural gas project at this stage of development in Wyoming or onshore in the western continental United States, the Proponents have intentionally designed the PAPA comprehensive development and production proposal to avoid, or in the alternative lessen and minimize, any on-site

impacts to wildlife, livestock, habitat and air while improving the socio-economic health of the local and state communities.

The Proponents have developed this plan based on recommendations from federal and state agency wildlife biologists. Year-round access lessens both the development period by up to 50% in areas with seasonal restrictions and impacts of human presence on wildlife populations over the life of the project. Temporary year-round access is necessary for this Proposal to be economically feasible.

Mitigation

Concentrated, Directional Drilling and Completion

The Proponents' plan minimizes surface fragmentation during the development phase by utilizing directional drilling from multi-well pads. By operating large multiple-well pads year-round, the Proponents are able to complete operations on individual pads much sooner, which in turn will allow pads to be reclaimed up to a decade earlier compared to multi-well pads developed under seasonally restricted stipulations. Multi-well pads also decrease the amount of disturbed acreage per well compared to what is needed for single well pads.

As the resource is currently understood, Proponents estimate it would take 4,400 additional wells for full development. Regardless of the number of wells needed to fully develop the field, the Proposed Action commits to no more than 600 pads. According to the No Action Alternative, The 1,800 producing wells on 700 pads would only extract 36% of the recoverable natural gas resource ensuring a request for additional NEPA analysis would occur within the next few years to allow for recovery of the remaining reserves. The impacts associated with the additional NEPA analysis would be in addition to impacts associated with the first 700 pads and the result would be far less beneficial than this Proposal.

Reclamation

The Proponents' plan allows individual pads to be reclaimed up to a decade earlier compared to multi-well pads developed under seasonal restriction stipulations. Proponents commit to the reclamation goal of restoring habitat function as soon as reasonably possible to pre-disturbance levels by restoring wildlife habitat through vigorous site-stabilizing plant growth with a native plant community that is endemic to the area. This community will be diverse in species composition, as well as age classifications, and productivity. Should available seed mixtures, techniques and other applications be available to enhance the productivity and diversity of the reclaimed area used by wildlife or livestock, these methods will be pursued. The Proponents will also commit to working with livestock producers on water placement and other methods to balance livestock needs with the need to isolate reclaimed areas for the revegetation. The Proponents commit that successful reclamation to maintain soil stability and provide habitat function will be measured in stages, as follows:

- a. The establishment of a viable seedling cover within 1 year of initiation of reclamation. Viable seedling cover shall consist of indigenous species and/or ecologically comparable species as approved by BLM habitat experts;

- b. Within 5 years of initiation of reclamation establish at least 50% of indigenous vegetative cover and species composition; and
- c. Within 8 years of initiation of reclamation establish at least 80% of indigenous vegetative cover and species composition.

By concentrating pad locations and operational activities, as well as engaging in earlier reclamation, the Proponents will leave large blocks of acreage undisturbed and migration corridors available for use by wildlife. On July 26, 2007, Proponents submitted revised language for the Reclamation Plan to BLM which supplants a, b, and c above.

Liquids Gathering System / Computer Assisted Operations

During the production phase, the Proponents commit to substantially reducing the amount of human activity, disturbance and on-site facilities through the use of liquids gathering systems (LGS) and consolidated production facilities, which will result in up to 165,000 fewer truck trips per year when compared to a full development scenario with no LGS. In addition, LGS significantly reduces tank requirements and associated emissions. Questar installed a LGS as mitigation for its 2004 Environmental Analysis. Ultra and Shell are committing to a LGS in the Proposed Action as their mitigation for year-round access. In addition, the Proponents commit to expanding the use of computer assisted operations (CAO) which will substantially reduce the number of trips to pads required for normal operations.

Air Emissions Reduction

As a part of the on-site mitigation commitment, the Proponents are committed to an 80% reduction in rig engine NO_x emissions from 2005 levels at the end of the three year and a half year period following issuance of the SEIS ROD (42 months). With year-round access, Proponents can identify and retain 'fit for purpose' drilling rigs and economically justify investments on these drilling rigs to reduce NO_x emissions.

Additional emission from traffic, tanks (VOC), and compressor engines will be reduced through implementation of LGS, CAO and other technologies.

After the Proponents achieve the rig engine NO_x emission goals, compression emissions become the dominant source of NO_x. Proponents are studying alternative solutions to reduce these emissions.

Lease Suspension

BLM wildlife biologists and the Wyoming Game and Fish Department have encouraged Proponents to mitigate impacts for wildlife by keeping large, contiguous blocks of habitat undisturbed and available for wildlife. Proponents offer to voluntarily suspend or commit to time-limited No Surface Occupancy (NSO) certain leases or acreage in the flank areas of the PAPA. This voluntary commitment ensures a significant portion of the flanks of the PAPA will be available as undisturbed habitat for wildlife. The certainty of undisturbed habitat allows for enhanced access for delineation and development activities in certain areas.

Mitigation, Monitoring, Continued Research, Performance-Based Objectives

Within one year of the PAPA SEIS Record of Decision (ROD), Proponents commit to developing a comprehensive mitigation and monitoring plan and by working with the BLM and Game and Fish to develop an appropriate wildlife threshold / emerging trends matrix. Proponents commit to continued research and monitoring of mule deer, pronghorn antelope, sage grouse and vegetation on the PAPA and of control groups. Results of this monitoring and other wildlife tracking efforts will be used to identify emerging trends and be used to cooperatively determine what mitigation actions (on-site and / or off-site) should be taken next based on the plan.

Planning

The Proponents commit to provide an annual development plan which will tier from a 10-year rolling forecast of PAPA activity fully describing the future development plans on an ongoing basis. Each year the specific areas of concentrated activities will be determined through joint review of the development plan. The Proponents, the BLM, Game and Fish and DEQ will reach agreement on the final plans early in the calendar year for the following year and tentative plans for the year after to allow sufficient time to plan, permit and execute new construction as required in the summer months. For example, the first quarter 2009 meeting determines 2010 activity and outlines 2011 plans. Each year, the Proponents will collaborate as appropriate to seek opportunities to further tighten the areas required for concentrated activities and reduce the associated impacts. The Proponents, BLM, Game and Fish and DEQ will jointly seek improvements to the development plan to further reduce impacts. During the annual meetings, impacts and mitigation will be evaluated for effectiveness.

Mitigation and Monitoring Fund

In order to mitigate potential impacts identified during the NEPA process, and in addition to the net cost Proponents will incur by implementing the Proponents' committed mitigation, Proponents have committed to establishing the Pinedale Anticline Operators' Mitigation and Monitoring Fund (Fund). This Fund will provide assurance that financial support is available for mitigation and monitoring for the life of the project. The sole purpose of the Fund is to provide funding for monitoring and mitigation impacts directly related to Proponents' activities in the PAPA SEIS project. Proceeds from the Fund can be used both on-site and off-site in the general PAPA area for air quality monitoring, wildlife, livestock, vegetation and reclamation research, analysis, monitoring, mitigation and agencies' PAPA-project essential full time equivalent (FTE) positions as a result of PAPA activities. Proponents envision that the Fund will support as components of wildlife mitigation:

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Summary

Mitigation, both on-site and off-site, is a substantial cost that the Proponents are committed to bear as part of a comprehensive development plan that includes the temporary relaxation of all seasonal restrictions including, but not limited to, big game and sage grouse within specific concentrated areas as defined by the annual development plan. Raptor seasonal stipulations would be managed under the 2006 voluntary best management practices from the United States Fish and Wildlife Service.

Proponents' mitigation commitment for the PAPA SEIS would supersede all existing commitments for mitigation as well as those identified in the following and any other Decision Records: BLM 2004 [Finding of No Significant Impact, Decision Record and Environmental Assessment for the Questar Year-Round Drilling Proposal, Sublette County, Wyoming, WY-100- EA05-034]; BLM 2005 [Finding of No Significant Impact, Decision Record and Environmental Assessment for the Questar Year-Round Drilling Proposal – Condensate Pipeline Modifications, Sublette and Lincoln Counties, Wyoming, WY-100-EA05-283]; and BLM 2005a [Questar Year- Round Drilling Proposal, Addendum Environmental Assessment, WY-100-EA06-04]. Acreage included in existing habitat enhancement projects that have been initiated pursuant to these and other Decision Records will apply towards the mitigation commitment under a PAPA SEIS ROD.